

REMARKS

Summary of Amendments

Upon entry of the present amendment claims 21 to 53 will be pending, with claims 21, 34 and 53 being independent claims. Support for the new claims can be found throughout the present specification and the canceled claims. In this regard, independent claim 21 corresponds generally to canceled claim 11, and independent claim 34 corresponds generally to canceled claim 16.

It is noted that the cancellation of claims 11-20 is without prejudice or disclaimer to the prosecution of these claims in one or more divisional and/or continuation applications.

Summary of Office Action

As an initial matter, Applicants note with appreciation that the claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f) and receipt of the certified copies of the priority documents from the International Bureau have been acknowledged in the present Office Action.

Claims 11-20 are objected to for their recitation of a material that is allegedly not completely delineated.

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Claims 11-20 are rejected under 35 U.S.C. § 112, first paragraph, because the specification allegedly does not enable any person skilled in the art to prepare/practice the invention commensurate in scope with these claims.

Claims 16-18 and 20 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,538,092 to Terry et al. (hereafter “TERRY”).

Claims 16-18 and 20 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by JP 62-230873 A (hereafter “JP ‘873”).

Claims 11-15 are indicated to be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. § 112, first paragraph.

Response to Office Action

Withdrawal of the rejections of record is respectfully requested, in view of the foregoing amendments and the following remarks.

Response to Objection to Claims 11-20

Claims 11-20 are objected to for their recitation of a material that is allegedly not completely delineated. In particular, the Office Action indicates that the term “coloring” in each of claims 11 and 16 should probably be replaced with the term “colorant”.

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Applicants respectfully submit that the use of the term “coloring” in connection with fillers such as, e.g., pigments is common in the art. Accordingly, withdrawal of the objection is respectfully requested.

Response to Rejection of Claims under 35 U.S.C. § 112, First Paragraph

Claims 11-20 are rejected under 35 U.S.C. § 112, first paragraph, because the specification allegedly does not enable any person skilled in the art to prepare/practice the invention commensurate in scope with these claims. In this regard, the rejection asserts that the full scope of the claims is unclear because the term “catalytically active fillers” recited in claims 11 and 15 (probably independent claims 11 and 16 were meant to be referred to) would seem to indicate that the fillers are those that are capable of facilitating a synthetic conversion but that it can allegedly not be ascertained precisely what reactions these fillers promote.

Applicants respectfully traverse this rejection. In particular, the catalytic filler imparts a catalytic function to the completed layer (the printed substrate) which may comprise, by way of non-limiting example, a catalytic oxidation of harmful substances, pollutants or dirt for cleaning or sterilizing purposes. For example, screen printing is suitable for coating large areas with such catalytically active layers. Further examples of applications of such layers

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with catalytic functions can be taken from document (16) cited in the Information Disclosure Statement submitted concurrently herewith. Accordingly, it is respectfully submitted that one of ordinary skill in the art will readily understand which functions a catalytically active filler as recited in the present claims encompasses. In view thereof, withdrawal of the rejection of the rejection of the claims under 35 U.S.C. § 112, first paragraph is warranted, which action is respectfully requested.

Response to Rejection of Claims under 35 U.S.C. § 102(e) over TERRY

Claims 16-18 and 20 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by TERRY. In particular, the rejection alleges that TERRY discloses a coating composition which in its most fundamental embodiment is said to comprise an aqueous-organic solvent mixture (e.g., mono- or dialkylated (di)ethylene glycol derivatives many of which allegedly inherently possess a boiling point of above 150 °C) containing (i) partial condensates of an epoxy-functional silane, (ii) a carboxylic acid compound, (iii) a metal oxide composite colloid (e.g., titania, zirconia, tin oxide and iron oxide), (iv) colloidal silica, and (v) an orthosilicate. The rejection further asserts that the materials mentioned in TERRY as exemplary for component (iii) are catalytically active fillers and that colloidal silica, component (iv), allegedly qualifies as rheology control agent as recited in independent claim 16 (now replaced by independent claim 34). Based on this (incorrect) understanding, the

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Official Action concludes that TERRY allegedly anticipates the composition of claim 16 which comprises a catalytically active filler as a filler.

Applicants respectfully disagree with the above assessment for at least the following reasons. In particular, the term “rheology control agent” is a technical term which has a well-known meaning to those of skill in the art. As can be taken, for example, from documents (17) and (18), i.e., standard reference books in the field of chemistry, which are cited in the Information Disclosure Statement filed concurrently herewith, while the primary viscosity control of a composition may be effected by fillers and organic solvents, the secondary viscosity control is effected by rheology control agents. In this regard, the entry “Rheologische Additive” on page 497 of document (17) may be referred to, which states (unverified English language translation):

Rheological Additives. The adjustment of the rheological characteristics, above all, of the consistency of a coating material takes place primarily through the selection of the binder, the proportion of the solvent and the ratio pigment/filler. In order to be able to influence the consistency, the viscosity and the flowability secondarily during the preparation, the application and the film formation, rheological additives are employed. Here, the influence may consist in a reduction of the viscosity, for example, to improve the spreading behavior and the leveling (leveling agent), or in an increase of the viscosity (thickening agent, anti-sagging agent). A time-dependent influence, i.e., as a function of shear stress, may be achieved with thixotroping agents.

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Further, document (18) teaches that “the rheological action of the above [rheology] additives is based on the fact that they form three-dimensional networks in the paint” (page 469, bottom of right column). Further characteristics of these additives are mentioned.

Documents (17) and (18) make it clear that rheology control agents are a specific group of substances which exhibit specific properties and are well-known to those of skill in the art. In other words, not every substance which may influence the viscosity/consistency of a composition qualifies as a rheology control agent. On the contrary, rheology control agents are clearly distinguished from materials such as fillers and solvents.

Regarding the assertion in the present Office Action that colloidal silica is a rheology control agent, it is noted that document (18) recites some specific examples of rheology additives, *inter alia*, pyrogenic silica, also known as fumed silica (see page 469, right column, second paragraph from the bottom). However, this does not mean that any kind of silica, in particular, colloidal silica (as mentioned in TERRY) qualifies as a rheology additive. In this regard, document (18) describes pyrogenic silica starting at page 635, and uses thereof, at page 640. Uses of pyrogenic silica include its use as a rheology additive, which is attributed to the formation of three-dimensional networks in a liquid (see page 640, paragraph preceding Figure 6.9). In contrast, the applications of colloidal silica, the description whereof starts at page 614, do not include its use as a rheology additive (see Chapter 4.7, Uses, page 627).

It also is noted that the use of pyrogenic silica as a rheology agent depends on the preparation thereof. Thus, hydrophobic pyrogenic silica has a strongly reduced thickening action and is used as a reinforcing filler (page 640, right column, lines 2-4).

Still further, Example 3 of the present application employs colloidal silica (silica sol) to increase the content of SiO₂ in the matrix. However, in order to attain the properties aimed at by the present invention, a separate rheology additive (ethylcellulose) is added to the composition.

The above discussion should have made it entirely clear that the filler or solvent of TERRY does not qualify as a rheology control agent as recited in present independent claims 34 and 53, wherefore this document does not anticipate the claimed composition for this reason alone.

In addition, Applicants note that even if TERRY discloses materials such as titania which according to the present invention may be used as catalytically active fillers, this does not necessarily mean that the fillers of TERRY are catalytically active materials. In this regard, metal oxides such as TiO₂ exist in a catalytically active form and in a catalytically inactive form, depending on the preparation thereof. TiO₂ is one of the most common white pigments in paints (see document (19) cited in the Information Disclosure Statement filed concurrently herewith) and can even be used for the protection of materials from UV radiation. It is apparent that a degradation by UV radiation of, e.g., organic binders used in

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a paint would be accelerated in an undesirable manner if the TiO₂ used in combination therewith possessed catalytic activity. Accordingly, it appears that the composition of TERRY also lacks a catalytically active filler, which is yet another reason why TERRY does not anticipate any of the claimed subject matter.

In view of the foregoing, it is respectfully submitted that the rejection of the claims under 35 U.S.C. § 102(e) over TERRY is not tenable and should be withdrawn.

Response to Rejection of Claims under 35 U.S.C. § 102(b) over JP '873

Claims 16-18 and 20 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by JP '873 and/or its abstract. The rejection alleges that according to the abstract of JP '873, a composition is disclosed which comprises a hydrolyzate of organotrialkoxysilane, a lower alcohol, a solvent having a boiling point of between 120 °C and 320 °C, fibrous potassium titanate, a pigment, and an ultrafine metallic oxide particulate such as titanium oxide and colloidal alumina. This rejection, too, is based on the assumption that the fillers and solvents of the composition according to JP '873 qualify as coloring/catalytically active fillers and/or rheology control agents. The reasons why this assumption is incorrect have already been discussed with respect to the rejection over TERRY. This discussion is incorporated herein in its entirety.

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Accordingly, the rejection of the present claims under 35 U.S.C. § 102(b) over JP '873 is without merit as well, wherefore withdrawal thereof is respectfully requested.

CONCLUSION

In view of the foregoing, it is believed that all of the claims in this application are in condition for allowance, which action is respectfully requested. If any issues yet remain which can be resolved by a telephone conference, the Examiner is respectfully invited to telephone the undersigned at the telephone number below.

Respectfully submitted,
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